

IN THE CLAIMS

Claim 1 (Previously Presented): A recording apparatus comprising:

encoding means for encoding an input content;

format organizing means for dividing content information resulted from encoding of the input content by the encoding means into access blocks each including a succession of frames and generating header information for the content information; and

writing means for writing the content data in units of an access block into a contiguous data area of a recording medium while writing the header information into a contiguous header area of the recording medium,

the format organizing means generates the access block so that a leading one of the frames of each access block is a base point of decoding subsequent frames, and also generates (1) access block size information for each access block and an output-time for a leading frame, and (2) a size information and output-time information for frames other than the leading frame; and

the writing means writes the access block size information for each access block and the output-time information for the leading frame into the header area, and writes the size information and the output-time information for the frames other than the leading frame of each access block along with each access block into the data area.

Claim 2 (Previously Presented): A recording medium in which encoded content information is to be recorded, the recording medium including:

a contiguous data area in which the content information is recorded in units of an access block each including a succession of frames; and

a contiguous header area in which header information for the content information is to be recorded,

the leading one of the frames of each access block being taken as the base point of decoding subsequent frames,

the header area having recorded therein access block size information for each access block and output-time information for the leading frame of each access block, and

the data area having recorded therein size information for frames other than the leading frame and output-time information for the frames other than the leading frame along with each access block.

Claim 3 (Previously Presented): A reproducing apparatus for playing a recording medium having encoded content information recorded therein, the apparatus comprising:

reading means for reading data recorded in the recording medium;

storage means for storing header information read from the recording medium;

decoding means for decoding content information read from the recording medium and outputting content; and

controlling means for controlling the reading and outputting of content information,

the recording medium including a contiguous data area in which content information is recorded in units of an access block including a succession of frames, and a contiguous header area in which header information for the content information is recorded, wherein

a leading frame of the access block is taken as a base point of decoding subsequent frames,

access block size information for each access block and output-time information for a leading frame of each access block is recorded in the header area, and

size information for frames other than the leading frame and output-time information for the frames other than the leading one is recorded along with each access block in the data area,

the controlling means functioning to:

read the access block size information for each access block and the output-time information for the leading frame of each access block, which is pre-recorded in the header area, before reading content information recorded in the data area and storing the access block size information and the output-time information into the storage means;

identify, for reproducing the leading frame of the access block, the recording position of the reading frame on the basis of the access block size information for the access block and the output-time information for the leading frame of each access block, stored in the storage means; and

read, for reproducing a frame other than the leading frame of the access block, the access block size information and the output-time information for the object frame from the data area of the recording medium on the basis of the access block size information for an access block including the object frame stored in the storage means to identify the recording position and output time of the object frame on the basis of the read access block size information and output-time information.

Claim 4 (Previously Presented): A recording method comprising the steps of:

encoding an input content;

dividing information resulting from encoding the input content into access blocks, each including a succession of frames of which a leading frame is taken as a base point of decoding subsequent frames;

generating, for each access block, access block size information and output-time information for the leading frame;

generating, for each access block, size information and output-time information for frames other than the leading frame;

writing the content information in units of an access block into a contiguous data area of a recording medium;

writing the access block size information for each access block and the output-time information for the leading frame into a contiguous header area of the recording medium; and

writing size information and output-time information for frames other than the leading frame of each access block along with each access block into the data area.

Claim 5 (Previously Presented): A reproducing method of reproducing content information, in which content information is read from a recording medium and output, the recording medium including a contiguous data area in which content information is recorded in units of an access block including a succession of frames, and a contiguous header area in which header information for the content information is recorded, a leading frame of the access block being taken as a base point of decoding, access block size information for each access block and output-time information for the leading frame of each access block being recorded in the header area, size information for frames other than the leading frame and output-time information for the frames other than the leading one being recorded along with each access block in the data area, the method comprising:

reading, by a medium drive, the access block size information for each access block and the output-time information for the leading frame of each access block, pre-recorded in the header area, before reading content information recorded in the data area and storing the access block size information and output-time information into a memory;

identifying, for reproducing the leading frame of the access block, the recording position of the leading frame on the basis of the access block size information for the access block and the output-time information for the leading frame of each access block, stored in the memory; and

reading, for reproducing an object frame other than the leading frame of the access block, the size information and the output-time information for the object frame from the data area of the recording medium by the medium drive on the basis of read access block size information for the access block including the object frame stored in the memory to identify a recording position and output time of the object frame on the basis of the read access block size information and output-time information.